The Scientific Basis for Modeling Northern Spotted Owl Habitat: A Response to Loehle, Irwin, Manly, and Merrill

Jeffrey R. Dunk, Brian Woodbridge, Elizabeth M. Glenn, Raymond J. Davis, Katherine Fitzgerald, Paul Henson, David W. LaPlante, Bruce G. Marcot, Barry R. Noon, Martin G. Raphael, Nathan Schumaker, Brendan White,

Abstract:

The U.S. Fish and Wildlife Service recently revised the recovery plan (USFWS 2011) and designated Critical Habitat (USFWS 2012a) for the Northern Spotted Owl (Strix occidentalis caurina). The Critical Habitat designation was based in part on a map of relative habitat suitability that was developed by USFWS (2011, 2012b) for this purpose. Loehle et al. (2015) critiqued the U.S. Fish and Wildlife Service's approach to modeling relative habitat suitability for the Northern Spotted Owl. Here, we respond to Loehle et al.'s assessment, and identify four major shortcomings within it. First, it mischaracterizes the literature on spotted owls and MaxEnt, the species distribution model used by the U.S. Fish and Wildlife Service. Second, it is predicated upon several logic errors that, when resolved, undermine Loehle et al.'s conclusions. Third, it fails to demonstrate that the nesting and roosting site location data used by the U.S. Fish and Wildlife Service is a biased sample. Lastly, Loehle et al.'s claims of significant flaws in analytical methods and ecological inference by the U.S. Fish and Wildlife Service are not convincing. We assert that the U.S. Fish and Wildlife Service's Northern Spotted Owl relative habitat suitability model was in fact scientifically rigorous, and that it met the intended goals that the U.S. Fish and Wildlife Service articulated for their models.